

## Notes on Reasoning (Argument)

### Inductive - Patterns

2 3 5 8 9

Key words: patterns  
 inference  
 assumption (for whole based on part)  
 data  
 (small) sample  
 observation/experiment  
 scientific method  
 prediction  
 unproved

#### Definition:

The process of... making observations or detecting patterns to come to a generalization.

### Deductive - Reasoning

1 4 6 7 10

Key words: Logic  
 facts  
 definitions  
 evidence-based  
 conclusion  
 Sherlock Holmes  
 Prove  
 legal argument

#### Definition:

The process of... using facts and logic to arrive at a valid conclusion. (true premise)

The generalization is called a:

conjecture <sup>EX)</sup> All tulips are red.  
 (mathematics)

How do you prove an inductive argument to be false?

counterexample  
 EX) Find a yellow tulip.

The accepted statement is

called a: premise (must be true)

The logic is called a:

valid argument

Therefore:

truth  
 math: theorem